BACKGROUND PAPER

ON

MINERAL EXPLORATION AND DEVELOPMENT

IN

NEWFOUNDLAND AND LABRADOR

NOVEMBER 7, 1991

INTRODUCTION

Levels of exploration activity for the province during 1991 are down considerably from levels attained over the last few years. All the major exploration indicators - claims staked, claims in good standing, diamond drilling and exploration expenditures reflect this decrease in activity (Table 1). The lack of certain federal tax incentives, thus making the high risk capital necessary to carry out mineral exploration unavailable or extremely difficult to raise, together with the overall downturn in the economy are considered the immediate causes for the decline in mineral exploration.

TABLE I

Newfoundland and Labrador

Exploration Statistics 1981 - 1991f

	Exploration $ Thousands	Claims Staked	Claims in Good Standing	Diamond Drilling (m)
1981	16,000	13,661	25,012	64,503
1982	12,000	4,670	18,517	48,771
1983	7,700	4,522	15,288	27,014
1984	8,400	11,048	19,662	44,146
1985	12,600	15,257	26,632	38,741
1986	11,800	14,594	33,269	51,145
1987	32,500	22,095	47,675	89,672
1988	41,160	26,199	65,822	234,831
1989	36,250	17,190	63,596	122,852
1990p	23,000	10,508	44,979	93,346
1991f	13,000	6,000	27,000	25,000

p: preliminary f: forecast
Source: Dept. of Mines and Energy (June 20, 1991)

Major exploration efforts are now mainly base metal directed, followed by gold with a small but increasing effort towards industrial minerals. These programs are now being orchestrated and carried out by the majors with very limited exploration being conducted by the junior exploration company sector.

SOUTHWEST COAST

Exploration activity on the southwest coast of the province dropped substantially during 1991 with just 3 to 4 companies active in the area.

Dolphin Explorations Ltd., carried out a limited soil geochemical and prospecting program on selected geochemical targets on its Cape Ray gold properties located approximately 20 km's east of Port aux Basque. Drill indicated potentially mineable reserves in the main Cape Ray deposit are estimated to be 454,951 tonnes grading 10.1 grams Au per tonne with associated silver and base metals.

Placer Dome optioned the Isle Aux Morts River gold property from Fortune Bay Resources and funded a $200,000 exploration program during 1991. Placer has the right to earn a 60% interest by paying $325,000 and spending $2.4 million on exploration over four years. Located approximately 8 km's north of Dolphins main Cape Ray deposit previous work has included a variety of geotechnical surveys including trenching and drilling. Some of the better drill results released to date include : 7.7 metres (true width) grading 9.6 grams Au per tonne and 7.3 metres grading 6.2 grams Au per tonne. The mineralization occurs in a vertically dipping zone, varies from 10.7 to 12.2 metres wide (true) and consists primarily of quartz mineralization with varying amounts of pyrite, chalcopyrite, galena and lesser amounts of other sulphides. Exploration carried out during 1991 consisted of trenching and diamond drilling. These results remain confidential.

Rio Algom Explorations Inc. hold title to some 100 claims located just southwest of Dolphins Cape Ray gold deposit. These claims cover the Isle aux Morts base metal prospects. Previous exploration work has included linecutting, various geophysical surveys, geochemistry and diamond drilling. Semi-massive to massive mineralization over narrow widths grading up to 10-20%

combined Pb-Zn, 0.2 - 1% Cu and 1.02 to 34.2 grams Ag per tonne occur at the contact been quartz-muscovite gneiss and biotite gneisses and amphibolites. These rocks have been interpreted as metamorphosed felsic and mafic volcanics and the deposit as distal volcanogenic. A deep diamond drilling program was carried out in 1991, but results remain confidential.

On May 24, 1991, Hope Brook Gold Inc. suspended its production operations at its gold mine located approximately 50 km east of Port aux Basque. During 1990, the mine produced 3,468kg of gold from ore grading 4.6 grams Au per tonne. The present shutdown has been attributed to environmental concerns aggravated by the volatility of gold prices and the ultimate costs of production.

Other companies who maintained claims in good standing in this area during 1991, some with exploration programs included Inco Gold, Bay Roberts Resources, Teck Exploration Ltd., Long Range Resources and Eastern Goldfields Ltd.

GREAT NORTHERN PENINSULA - WESTERN NEWFOUNDLAND

Exploration on the Great Northern Peninsula - Western Newfoundland portion of the province increased slightly in 1991.

Westminer Canada Ltd. recently staked 126 claims on the Port au Port Peninsula and 220 claims in the Flat Bay area, as part of an overall large scale evaluation/ compilation of the west coast for its base metal potential.

Late 1990 - early 1991, Teck Exploration Ltd. staked a total of 422 claims in several areas stretching from Stephenville to the tip of the Great Northern Peninsula. These claims were staked as part of Teck's ongoing evaluation of the west coast for mineralization akin to their now closed Daniel's Harbour carbonate hosted zinc mine. Approximately 830,000 tonnes of zinc concentrate was produced over the life of this mine.

On the east side of Port au Port Bay just northwest of Stephenville, Corona Corporation, in joint venture with Canchrome, continue evaluating recent sea bottom sediments for its chromite placer potential. The property consists of 332 claims and is under option agreement from Lucero Resource Corporation.

Newfoundland Resources and Mining Company Limited operate a limestone aggregate crushing and processing facility at Lower Cove, Port au Port Peninsula. This material is used for concrete and paving stone. Just north-northeast of its present operation, Newfoundland Resources are planning development of a high purity limestone deposit. This product has potential for non-aggregate uses such as flue gas desulphurization.

To the west at Aquathuna, Aquathuna Mining Inc. continued marketing and feasibility studies on the old Aquathuna limestone - dolomite quarry. Aquathuna were issued a mining lease on this property in 1990 for a period of three years. In addition, minor exploration, primarily prospecting and geological mapping, was carried out on a block of 30 claims held by Zeraldo Minerals in the immediate area. No results have been released.

Acadia Minerals Ventures Ltd. carried out a limited diamond drill program on its Stewart Pb-Zn option located near the community of Roddickton, on the east side of the Great Northern Peninsula. The holes were designed to test several soil geochemical anomalies. Results remain confidential.

Northeast of Roddickton Aurion Minerals Limited continued with its evaluation of its Coles Pond high purity marble deposit. Work included ongoing geological studies together with marketing and feasibility studies.

Len Pye is continuing to test the potential for a marble operation on his Goose Arm property located near the community of

Deer Lake. Work carried out during 1991 included geological mapping, stripping, some diamond drilling and ongoing marketing and feasibility studies.

South of Pye's property Long Range Resources conducted a limited exploration program designed as follow-up to previously identified geochemical values and prospective geological structures on its Pasadena gold property.

Newfoundland Goldbar, as operator in joint venture with Varna Gold Inc., continued to evaluate their Glover Island property located south of Corner Brook. Previous exploration work consisting of prospecting, detailed mapping and trenching identified a number of sites with visible gold hosted in quartz veins and silicified felsic volcanic rocks along a seven kilometre zone. Significant assays reported to date include the following:

* Width (m)	Grade (gm/tonne)Gold
3.58	10.58
1.50	35.00
1.60	6.60
5.25	3.40
12.80	1.13
4.40	2.70
1.50	167.00

* All trench samples.

A similar type exploration program was carried out in 1991. A limited diamond drill program is currently in progress. On August 1, 1991 Varna Gold Inc. announced that Newfoundland Goldbar acquired approximately 4.5 million shares or 20% of Varna.

To the immediate east of Newfoundland Goldbars property in the Squaw Lake area, a total of 499 claims were staked in the fall of 1991 in a similar geological environment by two separate individuals.

Noranda Exploration Company, Limited staked an additional 62

claims around their three massive sulphide projects in the Bay of Islands area. These include the York Harbour, Chimney Cove and Steep Brook projects. Work carried out in 1990 and 1991 included linecutting, geochemistry, geophysics and some diamond drilling. These results remain confidential. However, previous drill indicated reserves on the York Harbour property stand at 199,540 tonnes grading 2.63% Cu and 8.25% Zn.

WESTERN WHITE BAY

Little or no exploration was carried out in this area during 1991. However, some of the most prospective geology and structures remain almost completely staked primarily for gold. Currently the western White Bay region is known to host three styles of mineralization:

1) Structurally controlled gold mineralization occurs in the volcanic and sedimentary rocks of the Silurian Sops Arm Group as well as in late Proterozoic granitoid rocks and unconformably overlying Eocambrian to Cambrian sediments. Anomalous gold values have also been found within the Southern White Bay Allochton
2) Carbonate hosted galena occurs in brecciated altered dolostone of the Lower Volcanic Formation
3) Minor fluorite and molybdenite are found in the Devils Room granite and in the granites and related aplite dykes of the Gull Lake Intrusive Suite.

Companies which maintained claims in good standing in this area during 1991 included BP Resources Canada Ltd., Noranda Exploration Company, Limited, Carrick Gold, Commodore Mining, L. Murphy, Inco Gold and C. Verbiski.

BAIE VERTE PENINSULA

In June 1986, Noranda Exploration Company, Limited, prospectors discovered the Deer Cove gold prospect. This sparked a staking rush and subsequent intense exploration efforts over the

entire Baie Verte Peninsula. As a result, a number of deposits ie. Deer Cove, Pine Cove, Nugget Pond, Stog'er Tight and numerous prospects were discovered. Overall levels of exploration activity have dropped considerably since 1986 and much of the land acquired during the initial staking rush has been dropped and is now open for staking.

Very little exploration work was carried out in the Pine Cove area during 1991. Located just east of the community of Baie Verte, Corona is the operator of this project and has the right to earn a 70% interest in the property by meeting option payment requirements and delivering a bankable feasibility study to Varna Gold Inc. by November 9, 1992. Current insitu undiluted geologically drill indicated reserves for the Thunder and Lightning Zones stand at:

2,750,000 tonnes at 3.0 g/t (using 1.0g/T/2m cutoff) or

1,700,000 tonnes at 4.3 g/t (using 1.5g/T/2m cutoff) or

1,200,000 tonnes at 5.4 g/t (using 2.5g/T/2m cutoff)

representing approximately 200,000 ounces of gold which may be amenable to open pit exploitation. These reserves are based on approximately 10,000 metres of diamond drilling in 79 holes.

Two additional mineralizated zones - Romeo and Juliet, and Anoroc located just to the northeast and southeast respectively of the Thunder and Lightning zones were discovered in 1990. Results released to date indicate that the Romeo and Juliet showings are near vertical, shear related, quartz/Fe carbonate zones up to 12 meters wide with visible gold in boudinaged quartz veins located approximated 250 metres apart along a NNE trending lineament. Values released to date include channels of 23.4 grams Au per tonne over 1 metre from the Juliet and 1.0 gram Au per tonne over 10 metres from the Romeo. This mineralization is open in both directions along the trend. The Anoroc and Anoroc N showings have

similar mineralization to the Thunder and Lightning Zones with quartz/chlorite breccias containing pyrite and associated iron carbonate/albite. The zone has been traced for approximately 200 metres by trenching and prospecting and remains open in both directions. Widths are unknown. Values released to date from the Anoroc are up to 7.8 grams Au per tonne over 2 metres and 3.2 grams Au per tonne over 3 metres from two separate zones.

To the southeast of the Pine Cove property International Impala Resources Limited and joint venture partner and operator Noranda carried out a limited exploration program in early 1991 near Mings Bight. Drill indicated reserves on the Stog'er Tight showings (Gabbro East) stand at 453,592 tonnes grading 5.8 grams Au per tonne. The mineralization consisting of bright pink (hematite-stained) strongly albitized gabbro with up to 10% coarse grained pyrite has been traced over a length of 915 metres, to a depth of 244 metres and remains open at depth. The zone appears to have been cut off to the east.

Bitech Corporation are currently seeking additional financing to carry out further development on its Nugget Pond and Bett's Cove properties. Estimated mineable reserves at Nugget Pond stand at 514,000 tonnes averaging 14.13 grams Au per tonne while at Bett's Cove geologically inferred reserves stand at 132,000 tonnes grading 6.8 grams Au per tonne. The mineralization at Nugget Pond is stratabound, concentrated in a dark-green to black pyritic argillite horizon within the Bett's Cove ophiolite complex with the highest gold grades associated with very coarse euhedral pyrite.

In addition, Cominco Ltd. and a number of individual prospectors carried out reconnaissance work in the Helikian to lower Paleozoic, continentally derived polydeformed schists and gneisses and granitoid intrusions of the Fleur de Lys Belt located, for the most part, west of the Baie Verte highway (Dorset Trail). Evaluation is ongoing.

Newfoundland Exploration Company Limited announced in early October that it reached an agreement in principle with Corona Corporation to acquire the mill and (auxiliary) buildings located at the Rambler Property just east of Baie Verte. Consideration will consist of cash and treasury shares subject to regulatory approvals.

On February 4, 1991 Baie Verte Mines Inc. announced permanent closure of its dry operations. Asbestos is now being recovered through a wet milling process operated by Teranov Mining Corp. This process technology provides a low cost environmentally sound extraction technique.

SPRINGDALE - NOTRE DAME BAY

Noranda Exploration Company, Limited and joint venture partner Major General Resource have approved a $100,000 diamond drill program on its Rendell - Jackman property located just west of Springdale. This program is designed to test four base metal and gold targets. The most significant mineralization discovered to date, on this property, consists of a series of auriferous quartz veins within the Hammer Down zone. Geological inferred reserves on the Hammer Down zone currently stand at 429,593 tonnes grading 19.5 grams Au per tonne uncut or 11.6 grams Au per tonne cut.

Several companies and individuals acquired 10 to 16 claims each in the immediate Rendell - Jackman area in early 1991 ie. Corona Corporation, Gingrich.

Eastern Goldfields Limited carried out a limited exploration program on their Long Island base and precious metal property in 1991. Previous exploration has identified anomalous gold (up to 7,200 ppb) with associated base metals in soils.

Inco Gold, Terragold, Tina Lawrence Management, 10074 Newfoundland Limited, 10019 Newfoundland Limited, Falconbridge

Ltd., Ionex Ltd., Brad Mercer and Rio Algom all maintained claims in good standing through 1991 in the general Springdale area. However, only minor exploration was carried out on some of the claims.

BUCHANS - RED INDIAN LAKE

The Buchans-Red Indian Lake area is considered to be one of the best areas of high mineral potential in the province. The area contains the former high grade Buchans base/precious metal mine and a number of other significant base metal deposits. This area was the most actively explored portion of the province during 1991.

BP Resources Canada Limited carried out fairly large exploration programs on their Valentine Lake gold and Buchans base metal properties. On the Valentine Lake Property, at Valentine Lake, several gold occurrences have been found in quartz-tourmaline veins at the faulted contact of sedimentary rocks and a trondhjemite intrusion. Similar mineralization has been found at Victoria Bridge and at Guano Pit situated respectively 10km and 13km to the northeast of Valentine Lake. At Valentine Lake (Leprechaun and Osprey Zones), mineralization occurs in two zones. The following drill results have been reported:

Hole #	Width (m)	Grams Au per tonne	Zone
VL 12	2.1	4.5	Upper
VL 24	4.7	5.6	Upper
	3.0	2.7	Lower
VL 10	21.3	2.0	Lower
includes	4.6	6.3	
VL 30	7.5	2.5	Lower
VL 31	23.1	4.6	Lower
includes	9.6	9.1	
VL 33	1.0	8.4	
VL 25	3.0	1.5	Lower
VL 32	18.5	2.5	Lower
includes	4.0	7.4	Lower

Assay values ranging from 0.5 grams Au per tonne to 2 grams Au per tonne from channels and up to 32.5 grams Au per tonne from grabs have been reported from Victoria Bridge. Drilling to date has cut variable grades generally within the same range as the channels at this prospect. At Guano Pit gold vales as high as 20 grams Au per tonne in grabs and from 2 to 8 grams Au per tonne in trenches have been reported. The overall minimum exploration target at Valentine Lake is a deposit amenable to underground mining of between 5 and 10 million tonnes grading greater than 6 grams Au per tonne.

The Buchans Property covers the Buchans Mine area which produced between 1928 and 1984. A total of 16.2 million tonnes of ore with an average head grade of 14.5% Zn, 1.4% Cu, 7.6% Pb, 126 grams Ag per tonne and 1.37 grams Au per tonne was produced. Re-analysis of the geology in the immediate mine site area resulted in a new interpretation of the stratigraphy opening up a number of new potential exploration sites. To the west and south of the mine area, a 7km x 1km belt of felsic volcanics has been correlated with Buchan's Mines (Buchans River formation) geology but has been only sporadically explored to date. The belt hosts the Clementine prospect with estimated reserves of 362,874 tonnes grading 4.8% Zn, 0.3% Cu, 2.5% Pb, 1.02 grams Ag per tonne and 0.41 grams Au per tonne. Work planned for 1991 includes geochemistry, geophysics and diamond drilling in Valentine while on the Buchans property geological, geochemical, geophysical and diamond drilling surveys will be conducted. Some of these programs are currently on hold pending the results of BP Canada Inc's recent efforts to sell its mining division in Canada.

In addition BP Resources continued with its comprehensive exploration program on the remainder of the AND Charter lands. Exploration work focused on the Victoria Mine, Jack's Pond, Daniel's Pond, Reid Lot 228 and Great Burnt Lake.

In 1990, BP Resources surrendered approximately 60% of its AND Charter lands. Lands surrendered covered predominately granitic terranes and sparked very little outside interest.

The Noranda Exploration Company, Limited - BP Resources Canada Limited joint venture (60-40) continued work on and in the area of its Duck Pond base metal deposit. Work included limited diamond drilling and ongoing environmental and feasibility studies. Geological reserves at the Tally Pond/Duck Pond volcanogenic massive sulphide deposit together with the results of additional intersections (Sleeper Zones) in the immediate area are listed below:

Deposit	Tonnes	Cu%	Pb%	Zn%	Ag g/t	Au g/t
Duck	4.3×10^6	3.58	1.05	6.73	68.31	1.0
Lower Duck	$.16 \times 10^6$	3.27	2.62	8.96	90.00	0.92

Sleeper Zones

Width (m)	Cu%	Pb%	Zn%	Ag/g/t	Au g/t
9.85	3.27	0.71	5.32	60.20	1.29
4.15	1.18	0.76	6.25	70.00	0.24
9.80	3.01	1.50	12.83	65.56	0.35
5.90	1.32	0.45	16.20	45.65	0.45

Work on the remainder of Noranda's ground in the general Noel Paul's Brook area during 1991 consisted of a variety of geotechnical surveys including diamond drilling *i.e. North Moose Pond; Burnt Pond.* Evaluation is ongoing and results remain confidential.

Inco Limited continued with its ongoing evaluation of its Victoria Project located south of Buchans. This property consists of 582 claims bridging Victoria River. Work carried out during 1991 included some diamond drilling. Results are confidential.

Granges Inc. carried out a limited diamond drilling program on several optioned properties located in the general Noel Paul's Brook area. These holes were designed to test airborne geophysical targets. No results have been released.

Rio Algom has assembled a large land position in and around the old Gullbridge Cu minesite situated north of the Buchans polymetallic deposits. The company is working on a Buchans type geological model. Previous exploration work carried out on the property consisting of a variety of ground surveys including diamond drilling defined an extensive alteration package indicating the possibility for new sulphide deposits within close proximity to the old Gullbridge minesite itself. A total of 3 million tonnes averaging 1.1% Cu was produced between 1967 and 1972 at Gullbridge. Exploration work carried out in 1991 included ongoing geological studies and diamond drilling. Results have not been released.

Other companies with land holdings in the general Red Indian Lake area, some with 1991 exploration programs, include Falconbridge Limited, Corona Corporation, Tolisco Limited, Vinland Resources, Cominco Ltd., AVIP Resources and Rainbow Resources.

<u>Gander - Baie D'Espoir</u>

Manor Resources carried out a 12 hole drilling program for approximately 800 metres on its Virginia gold property located approximately 20km west of Gander. Manor has a 100% interest subject to a 1.25% net smelter royalty in the property. Work carried out over the last two years includes soil and till geochemistry and geophysical surveys. Results remain confidential.

Gander River Minerals Inc. hold title to some 800 claims located north of Gander and straddling Gander River. A program of geological, geochemical, geophysical, trenching and diamond drilling has been ongoing since the claims were acquired. These

surveys have identified several areas where anomalous gold (up to 9.1 grams Au per tonne - Cripple Creek prospect ; 168 grams Au per tonne - Glenwood) and copper (up to 1.3% Cu - Island Pond Brook South) have been identified.

Noranda Exploration Company, Limited together with their joint venture partners (Noront and Springer) are carrying out follow-up work on (1) The Duder Lake gold property, located north of Gander (Noront JV). Results released to date from this area include trench grabs of 30.9 and 27.8 grams Au per tonne, trench channels of 13.4 grams Au per tonne over 2.65 metres and drill intersections of 7.80 metre grading 4.5 grams Au per tonne and 6.9 grams Au per tonne over 2.8 metres (2) The Beaver Lake antimony property located southwest of Gander (Noront J.V.). Some of the more impressive results released to date include 4.2 to 31.3% Sb (diluted) over 1 metre from trenching and 7.74% Sb over 3.20 metres, 4.20% Sb over 23 metres and 33.0% Sb over 0.49 metres from diamond drilling. (3) The Mount Peyton property located west of Gander (Noront J.V.) Results released to date includes float assays ranging from 8.6 to 25.7 grams Au per tonne with up to 1632 grams Ag per tonne and 3.89% combined Cu, Pb, Zn and 0.49% Sb and diamond drill intersections grading 3.8 grams Au per tonne over 4.60 metres including 6.2 grams Au per tonne over 2.0 metres and (4) The Glenwood project located 21 km's west of Gander (Springer J.V) Assays reported to date include 61.7 and 72.0 grams Au per tonne from grab samples, channels of 356.7 grams Au per tonne over 1.22 metre and 212.6 grams Au per tonne over 0.73 metres and drill results of 38.6 grams Au per tonne over 6.46 metres including 106.3 grams Au per tonne over 2.3 metres in one hole while another hole yielded 19.5 grams Au per tonne over 2.6 metres. Follow-up work for these properties includes trenching and diamond drilling.

David Graham carried out geological mapping, prospecting and limited geochemistry on his 64 claim gold property, located east of Gander in the Indian Bay - Big Pond area. Results remain

confidential. Corona Corporation also maintain several claims in good standing in this area.

Falconbridge Limited continued with a fairly extensive exploration program, including diamond drilling on their base-precious metal Seal Bay properties, located at Seal Bay west of Botwood. Results remain confidential. This property is located north of Noranda's Point Leamington deposit with estimated reserves of 13.8 million tonnes grading 0.48% Cu, 1.92% Zn, 18.1 grams Ag per tonne and 0.9 grams Au per tonne. Falconbridge also continued with an evaluation of its Gander property during 1991. Located just east of Gander work included geophysics and some diamond drilling. No results have been released.

To the east of Falconbridge's Seal Bay Property, Tillicum Resources Ltd. acquired a total of 146 claims in two separate areas covering base metal prospects (Tea Arm) in mid 1991 and carried out a limited exploration program.

To the southeast of Tillicum's property, Roland Butler Jr. holds title to some 91 claims covering a number of precious metal prospects in the general Porterville, Bay of Exploits area. This property was under option agreement to Inco throughout most of 1991. Work carried out to date includes prospecting geological mapping and geochemistry. Results remain confidential.

To the north of Gander, in the New World Island - Twillingate Island area, a total of 18 claims each were recently staked by two separate individuals; P. Tallman - Moretons Harbour precious base metal prospect; R. Butler Jr.- Wild Cove base metal prospect.

Noranda Exploration Company, Limited as operator and joint venture partner Granges Inc. carried out a diamond drill program on their Winter Hill base-metal property, located at the head of Hermitage Bay southeast of Baie d'Espoir. This drilling tested

geophysical targets. Results remain confidential. However, Noranda have recently reduced their land holdings in this area. This drilling sparked some interest with Vinland Resources Limited staking a total 151 claims in two separate areas located north and south of the immediate Winter Hill area. In addition, Cominco Ltd. also maintained claims in this area during 1991. However, very little exploration work was carried out.

In the Huxter Pond area, located just west of the Baie D'Espoir Highway and south of Bishop's Falls, Noranda Exploration Company, Limited carried out a limited diamond drill program during 1991. Results have not been released.

At Baie D'Espoir in the general St. Albans area, Teck Explorations Ltd. maintain approximately 900 claims in good standing. Teck have carried out geological, geochemical and trenching programs on this gold property over the last couple of years. Similar surveys are planned for 1991 possibly with some diamond drilling by year end.

In addition, Giant Meguma Holdings, Homestake Canada, Lundrigan Consulting, Norwest Minerals, Cuvier Mines, White Plain Resources, Battle Mountain Canada, Rio Algom, Newfoundland Gold Corporation and a number of individuals also maintained claims in good standing in the general Gander - Baie D'Espoir Area in 1991. However, very little exploration was conducted.

Avalon - Burin Peninsulas

Cominco Ltd. is the biggest player on the Avalon Peninsula with several areas staked for a total of 618 claims. These properties are being evaluated on an ongoing basis for their base metal potential.

Vinland Resources holds title to some 267 claims near Holyrood, located approximately 30 kms west of St. John's. This

property was under option agreement to Inco throughout most of 1991. This precious metal prospect has been the subject of a wide variety of geotechnical surveys including IP geophysical and limited diamond drilling. Evaluation is ongoing.

J. Tuach Geological Consultants, Inc. carried out geological mapping over the Lower Cambrian Slate belt on Random Island, around Hickman's Harbour. Results of this survey indicates that high quality purple, green and red dimension slate, suitable for roofing and other construction materials occurs over a 6 kilometre strike-length. Preliminary tonnage estimates indicate that the area contains in excess of 350,000,000 tonnes capable of producing dimension slate products.

Newfoundland Slate Inc. have recently completed limited diamond drilling programs on their Nut Cove slate and Bell Island iron properties. Results remain confidential.

Very little exploration is being carried out on the remainder of the Avalon and on the Burin Peninsula. However, some of the more prospective geological areas remain staked ie. Corona at Hickey's Pond, Tolisco at Tug Pond. In addition, several new areas have recently been staked, J. Kennedy - Witless Bay base metal prospect, P. Saunders - Foxtrap precious metal prospect, Noranda Exploration Company, Limited, 240 claims in the Bellevue Beach area on a base/precious metal prospect.

On November 16, 1990 St.Lawrence Fluorspar Ltd. halted production and eventually went into receivership on January 23, 1991. This operation produced acid grade fluorspar with a plant capacity of 85,000 tonnes per year. The shutdown has been attributed to an influx of low priced Chinese material into the US market. The emergence of China as a key player has coincided with a decline in demand because of the phase out of chlorofluorcarbons

(CFCs) and a slow economy.

Labrador

Over the last several years the majority of exploration carried out in Labrador was conducted in western Labrador in the general Schefferville area. Exploration of the remainder has been minor and sporadic. This overall trend continued throughout 1991 with a moderate increase in grassroots exploration activity in the central and northern portions.

Cominco Ltd. staked 195 claims in May and June 1991 in the Porcupine Strand -Trunmore Bay area covering placer heavy minerals in modern beach sands, in particular its titanium potential. In addition, Cominco acquired 16 claims in the Pocketknife Lake area of central Labrador on a shale hosted base metal prospect in the Moran Lake Group.

Noranda Exploration Company, Limited have staked several areas in the central and western portions of Labrador for approximately 1700 claims covering both base and precious metal targets mainly in Proterozoic clastic sedimentary environments. Exploration programs on these properties are being directed from Noranda's Quebec exploration office.

Mart Mining and Exploration Ltd. continued to evaluate several graphite prospects located in western Labrador. These prospects were discovered by a Newfoundland Department of Mines and Energy Survey crew in the summer of 1989. Some diamond drilling was carried out in 1991 but results remain confidential.

Acadia Mineral Ventures Inc. continued with metallurgical and marketing studies on its Strange Lake yttrium - zirconium - rare earth deposit located west of Nain on the Labrador - Quebec border. This property is optioned from the Iron Ore Company of Canada. Current reserves stand at 55 million tonnes containing 0.38%

yttrium and 2.99% zirconium.

The Labrador Inuit Development Corp. plan to ship 40 rough blocks of labradorite from its Nain site to an Italian firm in Italy by the end of this year's shipping season. These blocks will be further dressed in Italy and used mainly for building materials. Further shipments are contingent on the market acceptance of the dressed product.

Hollinger North Shore Exploration Inc. hold title to some 40 Fe-Mn prospects sharing approximately 3 million tons of inferred reserves located in western Labrador in the general Schefferville area. Work includes an ongoing program of stripping, trenching, drilling and metallurgical test programs. Mine feasibility marketing and metallurgical work carried out to date continues to provide encouragement. Approximately 300,000 tonnes have been mined to date.

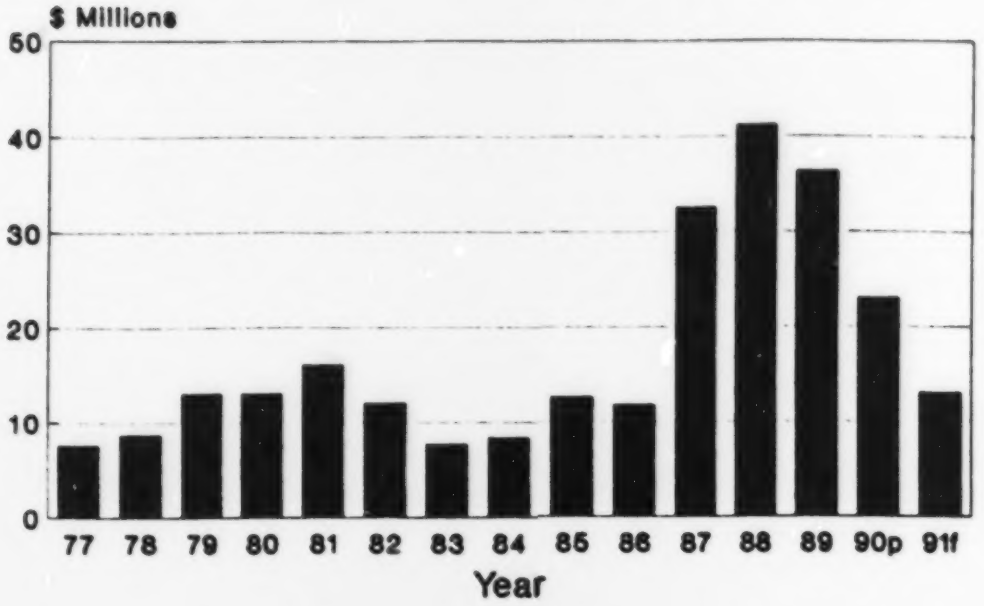
Falconbridge Limited staked approximately 960 claims in the Saglek area of Northern Labrador and approximately 300 claims in the Hunt River area of central Labrador in the fall of 1990 and approximately 200 claims in the Florence Lake area of central Labrador in 1991. These claims were staked as part of Falconbridge's overall evaluation of the Labrador part of the province for its base metal and nickel potential. Exploration carried out during 1991 included geological mapping, prospecting and geophysical surveys. Results remain confidential.

Summary

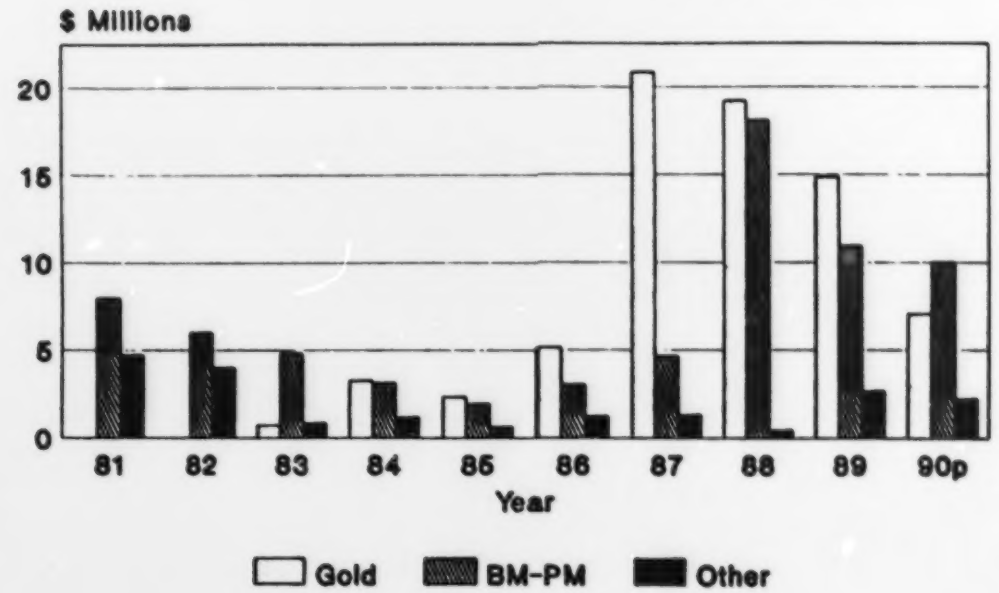
Mineral exploration activity in Newfoundland and Labrador during 1991 continued on its downward trend. Forecasts for 1992 indicates that this trend will continue. The majority of exploration work carried out in 1991 was base metal directed and orchestrated and carried out by the major mining exploration

sector. Activity by the junior exploration sector was virtually non-existent. The moderate increase in grassroots exploration in the Labrador portion of the province during 1991 is considered positive. However, encouraging results from this seasons exploration efforts and at least one positive development/production decision are considered vital to provide a necessary boost to the industry.

Newfoundland and Labrador
Annual Exploration Expenditures
(Including Adm. & Overhead)

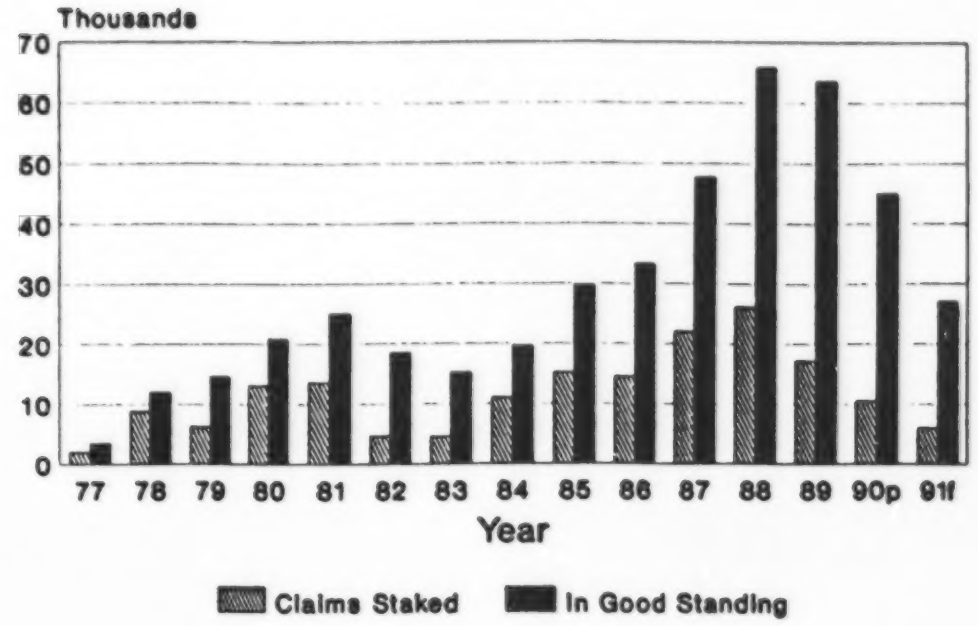


Newfoundland and Labrador
Exploration Field Expenditures

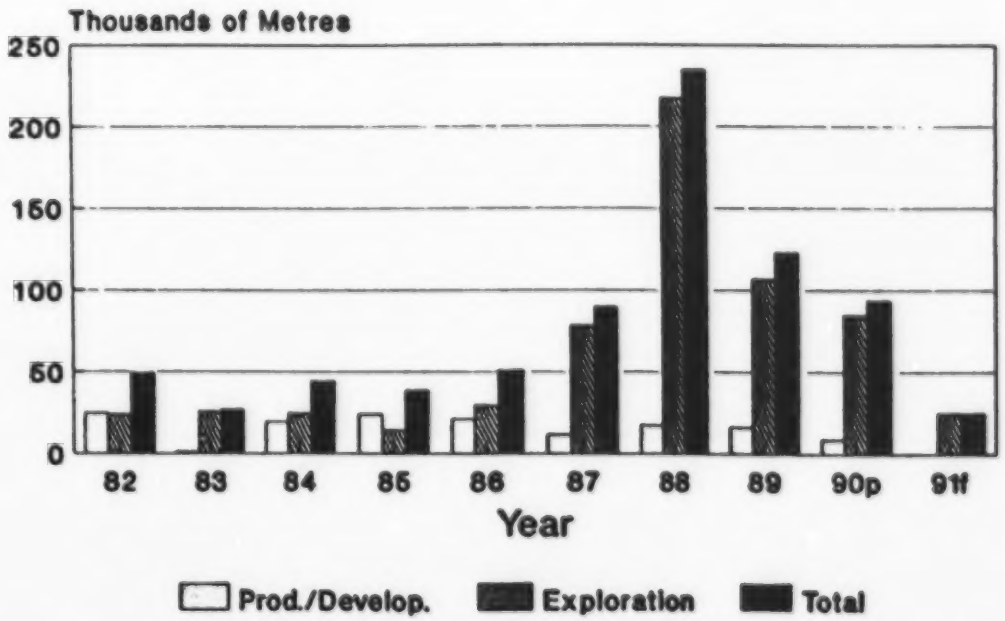


p: preliminary f: forecast
BM-PM: Base Metals - Precious Metals
Source: Dept. of Mines and Energy

Newfoundland and Labrador
Claim Staking Statistics

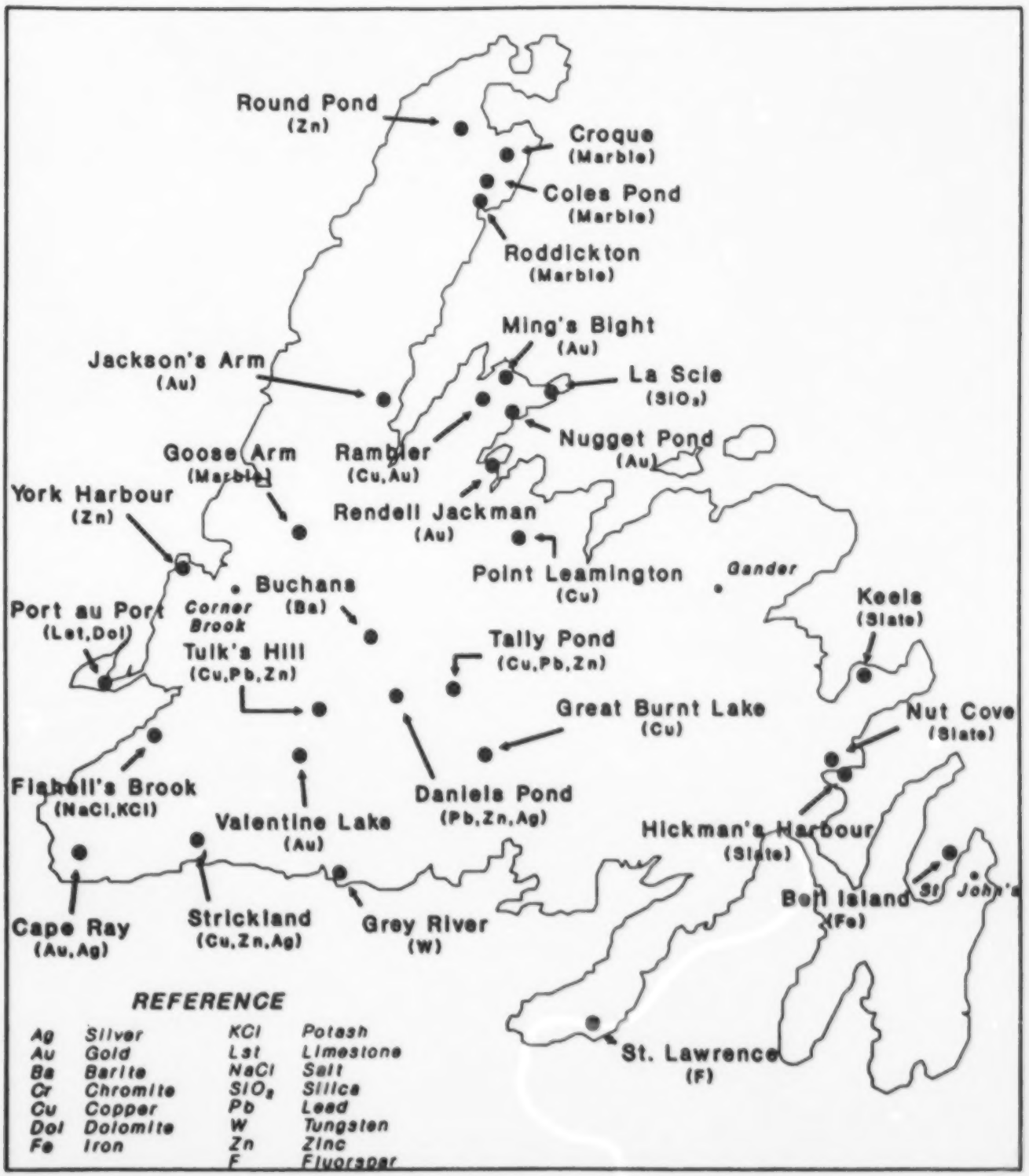


Newfoundland and Labrador
Diamond Drilling Statistics



p: preliminary f: forecast
Source: Dept. of Mines & Energy

Significant Deposits of Newfoundland



BASE METAL EXPLORATION
MAIN AREAS OF ACTIVITY

* PROJECTS RECENTLY DRILLED OR BEING DRILLED
x OTHER EXPLORATION PROJECTS

1 - ROUND POND
2 - DANIEL'S HARBOUR
3 - YORK HARBOUR
4 - RAMBLER
5 - TILT COVE
6 - SPRINGDALE PENNINSULA
7 - PILLEY'S ISLAND
8 - GULLBRIDGE
9 - POINT LEAMINGTON
10 - BUCHANS
11 - SKIDDER
12 - TULKS HILL
13 - DUCK POND - TALLY POND
14 - GREAT BURNT LAKE
15 - WINTER HILL
16 - CARBONEAR
17 - SEAL BAY
18 - DANIELS POND
19 - LAKE BOND
20 - PORT AU PORT
21 - ISLE AUX MORT
22 - GREGORY RIVER
23 - STRICKLAND
24 - LE MANCHE

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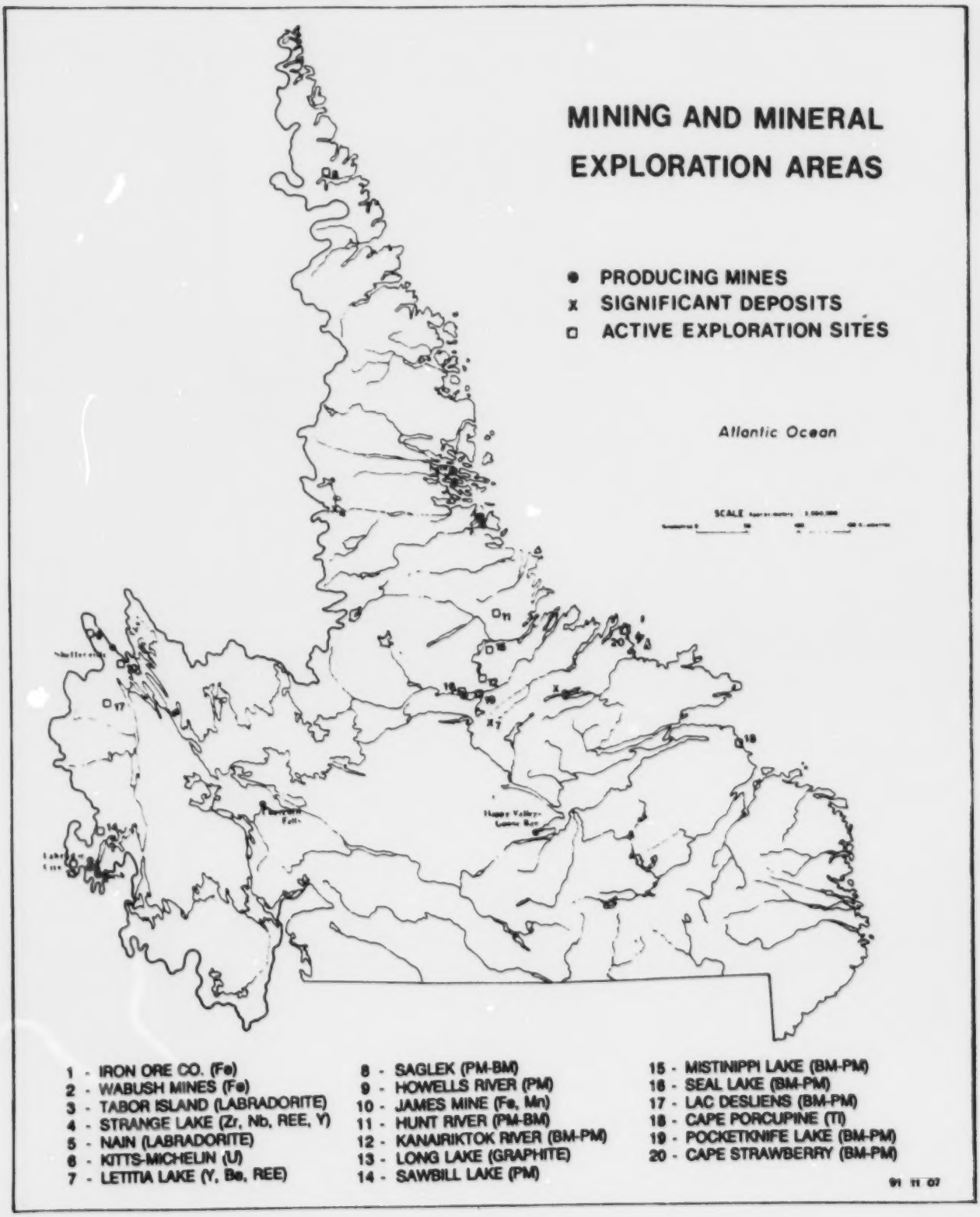
MINING AND MINERAL
EXPLORATION AREAS
● PRODUCING MINES
x SIGNIFICANT DEPOSITS
□ ACTIVE EXPLORATION SITES
Atlantic Ocean
1 - IRON ORE CO. (Fe)
2 - WABUSH MINES (Fe)
3 - TABOR ISLAND (LABRADORITE)
4 - STRANGE LAKE (Zr, Nb, REE, Y)
5 - NAIN (LABRADORITE)
6 - KITTS-MICHELIN (U)
7 - LETITIA LAKE (Y, Be, REE)
8 - SAGLEK (PM-BM)
9 - HOWELLS RIVER (PM)
10 - JAMES MINE (Fe, Mn)
11 - HUNT RIVER (PM-BM)
12 - KANAIRIKTOK RIVER (BM-PM)
13 - LONG LAKE (GRAPHITE)
14 - SAWBILL LAKE (PM)
15 - MISTINIPPI LAKE (BM-PM)
16 - SEAL LAKE (BM-PM)
17 - LAC DESLIENS (BM-PM)
18 - CAPE PORCUPINE (TI)
19 - POCKETKNIFE LAKE (BM-PM)
20 - CAPE STRAWBERRY (BM-PM)
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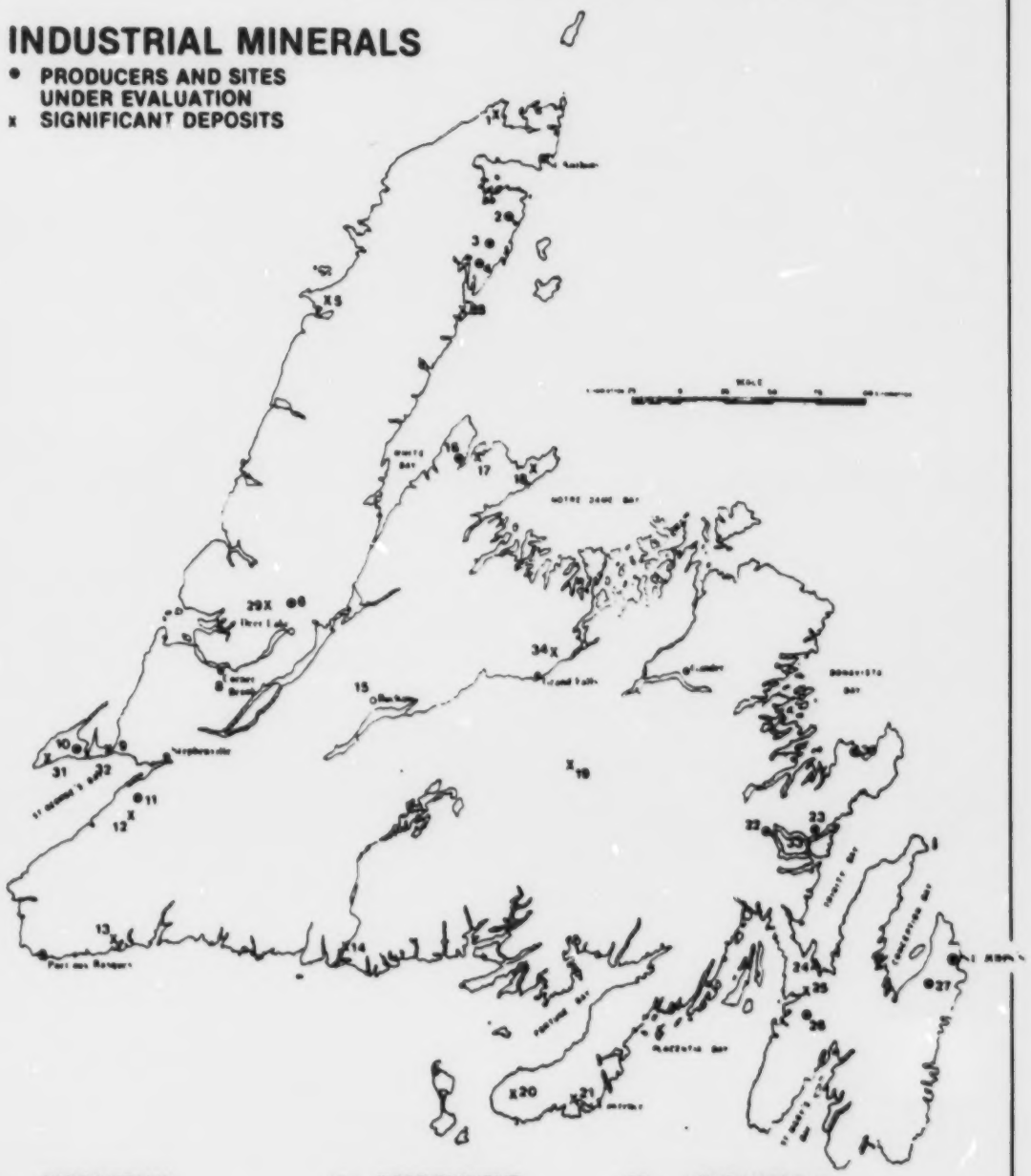
INDUSTRIAL MINERALS

- • PRODUCERS AND SITES UNDER EVALUATION
- x SIGNIFICANT DEPOSITS



1 - CAPE NORMAN
2 - CROQUE
3 - COLES POND
4 - PENNY'S POND
5 - PORT AUX CHOIX
6 - CORMACK
7 - GOOSE ARM
8 - CORNER BROOK
9 - AGUATHUNA
10 - LOWER COVE
11 - FLAT BAY
12 - FISCHELLS BROOK
13 - ROSE BLANCHE
14 - GREY RIVER
15 - BUCHANS
16 - BAIE VERTE
17 - MINGS BIGHT
18 - LA SCIE
19 - GREAT BEND
20 - FORTUNE
21 - ST. LAWRENCE
22 - TRINITY BRICK
23 - NUT COVE
24 - COLLIERS POINT
25 - LONG HARBOUR
26 - DUNVILLE
27 - NEWFOUNDLAND MINERALS
28 - CANADA HARBOUR
29 - DEER LAKE
30 - KEELS
31 - MAINLAND
32 - LOWER COVE EAST
33 - HICKMAN'S HARBOUR
34 - HI POINT PEAT

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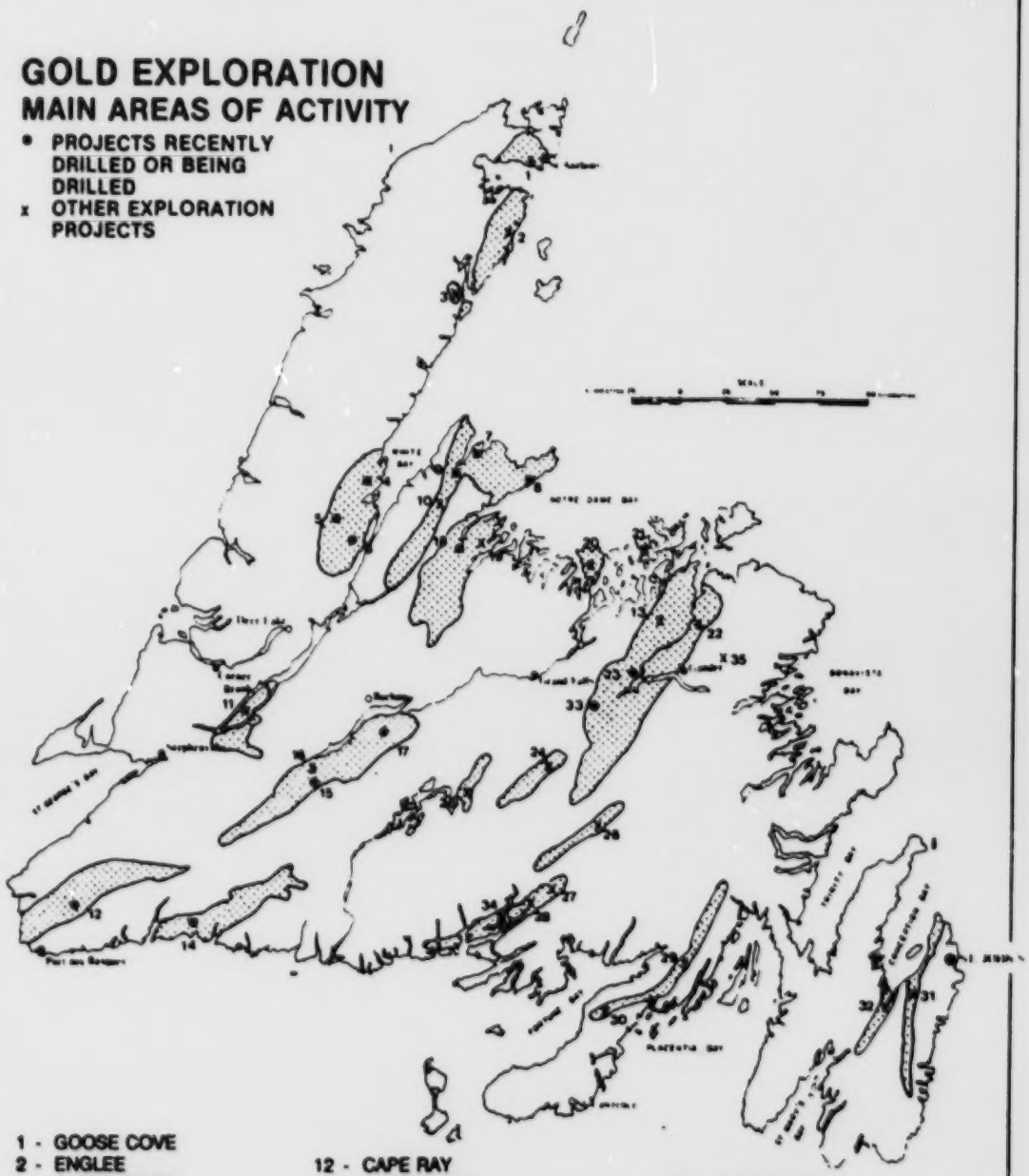
GOLD EXPLORATION
MAIN AREAS OF ACTIVITY

- • PROJECTS RECENTLY DRILLED OR BEING DRILLED
- x OTHER EXPLORATION PROJECTS



1 - GOOSE COVE
2 - ENGLEE
3 - CLOUD RIVER
4 - JACKSON'S ARM-
5 - SILVER MOUNTAIN
6 - SOPS ARM
7 - DEVIL'S COVE
STOG'ER TIGHT
LIGHTNING ZONE
8 - BETTS COVE -
NUGGET POND
9 - DORSET SHOWING
10 - FLATWATER POND
11 - GLOVER ISLAND
12 - CAPE RAY
13 - DUDER LAKE
14 - HOPE BROOK
15 - VALENTINE LAKE
16 - MIDAS POND
17 - BOBBYS POND
18 - RENDELL JACKMAN
19 - LITTLE BAY
20 - FORTUNE HARBOUR
21 - MORETONS HARBOUR -
NEW WORLD ISLAND
22 - GANDER BAY
23 - GLENWOOD
24 - GREAT BEND
25 - GREAT BURNT LAKE
26 - TERRA NOVA RIVER
27 - KIM LAKE
28 - LITTLE RIVER
29 - HICKEY'S POND
30 - BURIN KNEE
31 - FOXTRAP
32 - HOLYROOD
33 - MT. PEYTON
34 - ST. ALBANS
35 - WEIRS POND

91/11/07